

**AMENDMENTS TO THE CLAIMS:**

The following listing of claims replaces all prior listings.

**IN THE CLAIMS:**

Listing of claims

1. (Currently Amended) A method for header compression, comprising:  
communicating packet header information;  
comparing, at a communication device, a current item list containing a plurality of current items of said packet header with a reference item list containing a plurality of reference items, wherein said comparing determines a difference between said current item list and said reference item list;  
determining a type of classification of the current item list based on said comparing the current item list and the reference item list, wherein said type of classification is based on at least one of: whether an item in said reference item list is in said current item list, whether said item is in said reference item list, and whether contents of said item in said current item list are the same as contents of said item in said reference item list; [[and]]  
encoding information regarding said difference prior to sending said information from a first entity to a second entity, wherein encoding said information comprises a combination of at least one of the following: encoding information regarding a position of a newly added item to said reference item list, encoding information regarding which item in said reference item list is not in said current item list, and encoding information regarding content of at least one item in said reference item list; and

using the determined type of classification to control the communication and compression of the packet header information, wherein the classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes.

2. (Cancelled)

3. (Currently Amended) The method of claim [[2]] 1, wherein the communication of the information further comprises sending information regarding said difference from a first entity to a second entity.

4. (Cancelled)

5. (Currently Amended) The method of claim [[4]] 1, wherein encoding said information comprises encoding information regarding a position of a newly added item to said reference item list.

6. (Currently Amended) The method of claim [[4]] 1, wherein encoding said information comprises encoding information regarding which item in said reference item list is not in said current item list.

7. (Currently Amended) The method of claim [[4]] 1, wherein encoding said information comprises encoding information regarding content of at least one item in said reference item list.

8. (Cancelled)

9. (Previously Presented) The method of claim 1, wherein the communicating information further comprises sending a compressed list from a first entity to a second entity.

10. (Original) The method of claim 9, wherein said compressed list includes information regarding a difference between said current item list and said reference item list.

11. (Original) The method of claim 10, wherein said difference is encoded within said compressed list based on said determined type of classification.

12. (Original) The method of claim 11, wherein said information further comprises a type of encoding.

13. (Previously Presented) The method of claim 12, wherein said type of encoding comprises one of an insertion encoding scheme, a removal encoding scheme and a content change encoding scheme.

14. (Original) The method of claim 1, further comprising sending information regarding a difference between an item in said current item list and a corresponding item in said reference item list.

15. (Cancelled)

16. (Cancelled)

17. (Previously Presented) The method of claim 1, wherein the communicating further comprises sending said reference item list from a first entity to a second entity.

18. (Cancelled)

19. (Currently Amended) A method for ~~header compression~~, comprising:

classifying a current item list containing a plurality of items of a packet header by comparing, at a communication device, the current item list with a reference item list containing a plurality of items, wherein said comparing determines a difference between said current item list and said reference item list;

determining a type of classification of the current item list based on said comparing of the current item list with the reference list, wherein the classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes, wherein said type of classification is based on at least one of: whether an item in said reference item list is in said current item list, whether said item is in said reference item list, and whether contents of said item in said current item list are the same as contents of said item in said reference item list;

based upon the classifying of the at least one item of the current item list, forming a compressed list, wherein said compressed list includes information regarding a difference between the current item list and the reference item list; [[and]]

encoding information regarding said difference within said compressed list based on said classifying prior to transmitting said information from a first entity to a second entity; and  
transmitting said compressed list as a compressed packet header.

20. (Cancelled)

21. (Cancelled)

22. (Previously Presented) The method of claim 21, wherein the transmitting the compressed list further comprises transmitting information regarding said difference from a first entity to a second entity.

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Currently Amended) The method of claim [[25]] 19, wherein encoding said information comprises encoding information regarding a position of a newly added item to said reference item list.

27. (Currently Amended) The method of claim [[25]] 19, wherein encoding said information comprises encoding information regarding which item in said reference item list is not in said current item list.

28. (Currently Amended) The method of claim [[25]] 19, wherein encoding said information comprises information regarding content of at least one item in said reference item list.

29. (Currently Amended) The method of claim [[25]] 19, wherein said information comprises a type of encoding.

30. (Previously Presented) The method of claim 19, wherein the sending the compressed list further comprises sending said reference item list from a first entity to a second entity.

31. (Cancelled)

32. (Currently Amended) An apparatus, comprising:

at least one [[a]] processor configured to compare a current item list containing a plurality of current items of a packet header with a reference item list containing a plurality of reference items, wherein said comparing determines a difference between said current item list and said reference item list, to determine a type of classification of the current item list based on said comparing of the current item list and the reference item list, wherein said type of classification is based on at least one of: whether an item in said reference item list is in said current item list, whether said item is in said reference item list, and whether contents of said item in said current item list are the same as contents of said item in said reference item list, to encode information regarding said difference prior to transmitting said information from said apparatus to another entity based on said determined type of classification, and to communicate transmit compressed information based upon the determined type of classification, wherein the classification of the current list associates items in the current item list with at least one of a plurality of different predetermined encoding schemes.

33. (Cancelled)

34. (Currently Amended) The apparatus of claim [[33]] 32, further comprising a transmitter configured to transmit information regarding said difference from said apparatus to another entity.

35. (Cancelled)

36. (Previously Presented) The apparatus of claim 32, further comprising a transmitter configured to transmit a compressed list from said apparatus to another entity.

37. (Previously Presented) The apparatus of claim 36, wherein said compressed list includes information regarding a difference between said current item list and said reference item list.

38. (Cancelled)

39. (Cancelled)

40. (Currently Amended) An apparatus, comprising:

at least one [[a]] processor configured to classify at least one item of a current item list containing a plurality of items of a packet header by comparing the current item list with a reference item list containing a plurality of items and based upon the classifying of the at least one item of the current item list to form a compressed list including said at least one item, wherein said comparing determines a difference between said current item list and said reference item list, wherein said at least one processor is configured to determine a type of classification of the current item list based on said comparing, wherein said type of classification is based on at

least one of: whether an item in said reference item list is in said current item list, whether said item is in said reference item list, and whether contents of said item in said current item list are the same as contents of said item in said reference item list;

an encoder configured to encode information regarding said difference prior to transmitting said information from said apparatus to another entity based on said determined type of classification, and wherein the classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes, wherein said encoder is configured to perform a combination of at least one of the following: encoding information regarding a position of a newly added item to said reference item list, encoding information regarding which item in said reference item list is not in said current item list, and encoding information regarding content of at least one item in said reference item list; and

a transmitter configured to transmit said compressed list;

wherein said processor is configured to determine a type of classification of the current item list based on said comparing, and wherein the classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes.

41. (Cancelled)

42. (Cancelled)

43. (Currently Amended) The apparatus of claim [[42]] 40, wherein said transmitter is configured to transmit information regarding said difference between said current item list and said reference item list from said apparatus to another entity.

44. (Cancelled)

45. (Currently Amended) The apparatus of claim [[42]] 40, wherein said encoder is configured to encode information regarding a position of a newly added item to said reference item list.

46. (Currently Amended) The apparatus of claim [[42]] 40, wherein said encoder is configured to encode information regarding which item in said reference item list is not in said current item list.

47. (Currently Amended) The apparatus of claim [[42]] 40, wherein said encoder is configured to encode information regarding content of at least one item in said reference item list.

48. (Cancelled)

49. (Previously Presented) The apparatus of claim 40, wherein said compressed list includes information regarding a difference between a current item list and a reference item list.

50. (Previously Presented) The apparatus of claim 49, wherein said difference is encoded within said compressed list based on said classifying.

51. (Currently Amended) An apparatus, comprising:  
comparing means for comparing a current item list containing a plurality of current items of a packet header with a reference item list containing a plurality of reference items, wherein

said comparing determines a difference between said current item list and said reference item list;

determining means for determining a type of classification of the current item list based on a comparing of the current item list and the reference item list, wherein said type of classification is based on at least one of: whether an item in said reference item list is in said current item list, whether said item is in said reference item list, and whether contents of said item in said current item list are the same as contents of said item in said reference item list;

encoding means for encoding said information regarding said difference within said compressed list prior to transmitting said information from said apparatus to another entity based on said determined type of classification, wherein said encoding performs a combination of at least one of the following: encoding information regarding a position of a newly added item to said reference item list, encoding information regarding which item in said reference item list is not in said current item list, and encoding information regarding content of at least one item in said reference item list; and

communicating means for communicating compressed packet header information based upon a determined type of classification, wherein the classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes.

52. (Cancelled)

53. (Currently Amended) A method for header decompression, comprising:

receiving, at a communication device, packet header information generated by a process in which a current item list containing a plurality of current items of said packet header is compared with a reference item list containing a plurality of reference items, wherein said comparing determines a difference between said current item list and said reference item list, a type of classification of the current item list is determined based on said comparing of the current item list and the reference item list, wherein said type of classification is based on at least one of: whether an item in said reference item list is in said current item list, whether said item is in said reference item list, and whether contents of said item in said current item list are the same as contents of said item in said reference item list, and said process encoding said information regarding said difference within said compressed list prior to transmitting said information from said apparatus to another entity based on said determined type of classification, wherein said encoding performs a combination of at least one of the following: encoding information regarding a position of a newly added item to said reference item list, encoding information regarding which item in said reference item list is not in said current item list, and encoding information regarding content of at least one item in said reference item list, the determined type of classification is used to control the communication and compression of the packet header information, wherein the classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes; and

decompressing the received header information.

54. (Previously Presented) The method of claim 53, wherein the received header information comprises information sent from a first entity to a second entity.

55. (Previously Presented) The method of claim 53, further comprising:

receiving said reference item list.

56. (Previously Presented) The method of claim 55, wherein said decompressing is performed using said received reference item list as a reference.

Claims 57-59 (Cancelled).

60. (Currently Amended) An apparatus for header decompression, comprising:  
a receiver configured to receive packet header information generated by a process in which a current item list containing a plurality of current items of said packet header is compared with a reference item list containing a plurality of reference items, wherein said comparing determines a difference between said current item list and said reference item list, a type of classification of items in the current item list is determined based on said comparing the current item list and the reference item list, wherein said type of classification is based on at least one of: whether an item in said reference item list is in said current item list, whether said item is in said reference item list, and whether contents of said item in said current item list are the same as contents of said item in said reference item list, and said process encoding said information regarding said difference within said compressed list prior to transmitting said information from said apparatus to another entity based on said determined type of classification, wherein said encoding performs a combination of at least one of the following: encoding information regarding a position of a newly added item to said reference item list, encoding information regarding which item in said reference item list is not in said current item list, and encoding information regarding content of at least one item in said reference item list, the determined type

of classification is used to control the communication and compression of the packet header information wherein the classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes; and  
a decompressor configured to decompress the received header information.

61. (Previously Presented) The apparatus of claim 60, wherein the received header information comprises information sent from a first entity to a second entity.

62. (Previously Presented) The apparatus of claim 60, wherein the receiver is further configured to receive said reference item list.

63. (Previously Presented) The apparatus of claim 62, wherein said decompressor is configured to use said received reference item list as a reference.

Claims 64-68 (Cancelled)

69. (Currently Amended) A computer-readable medium configured to store instructions that, when executed, control a processor to perform:  
communicating packet header information;  
comparing, at a communication device, a current item list containing a plurality of current items of said packet header with a reference item list containing a plurality of reference items, wherein said comparing determines a difference between said current item list and said reference item list;

determining a type of classification of the current item list based on said comparing of the items of the current item list and the reference item list, wherein said type of classification is based on at least one of: whether an item in said reference item list is in said current item list, whether said item is in said reference item list, and whether contents of said item in said current item list are the same as contents of said item in said reference item list; [[and]]

encoding information regarding said difference prior to sending said information from a first entity to a second entity, wherein encoding said information comprises a combination of at least one of the following: encoding information regarding a position of a newly added item to said reference item list, encoding information regarding which item in said reference item list is not in said current item list, and encoding information regarding content of at least one item in said reference item list; and

using the determined type of classification to control the communication and compression of the packet header information, wherein the classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes.

70. (Currently Amended) A computer-readable medium configured to store instructions that, when executed, control a processor to perform:

classifying at least one item of a current item list containing a plurality of items of a packet header by comparing, at a communication device, the current item list with a reference item list containing a plurality of items, wherein said comparing determines a difference between said current item list and said reference item list;

determining a type of classification of items in the current classification list based on said comparing of the current item list with the reference item list, wherein the classification of the

current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes, wherein said type of classification is based on at least one of: whether an item in said reference item list is in said current item list, whether said item is in said reference item list, and whether contents of said item in said current item list are the same as contents of said item in said reference item list;

based upon the classifying of the at least one item of the current list, forming a compressed list, wherein said compressed list includes information regarding a difference between a current item list and a reference item list; [[and]]

encoding information regarding said difference within said compressed list based on said classifying prior to transmitting said information from a first entity to a second entity; and  
transmitting said compressed list as a compressed packet header.

71. (Currently Amended) A computer-readable medium configured to store instructions that, when executed, control a processor to perform:

receiving, at a communication device, packet header information generated by a process in which a current item list containing a plurality of current items of said packet header is compared with a reference item list containing a plurality of reference items, wherein said comparing determines a difference between said current item list and said reference item list, a type of classification of items in the current item list is determined based on said comparing of the items of the current item list and the reference item list, wherein said type of classification is based on at least one of: whether an item in said reference item list is in said current item list, whether said item is in said reference item list, and whether contents of said item in said current item list are the same as contents of said item in said reference item list, and encoding said information regarding said difference within said compressed list prior to transmitting said

information from said apparatus to another entity based on said determined type of classification,  
wherein said encoding performs a combination of at least one of the following: encoding  
information regarding a position of a newly added item to said reference item list, encoding  
information regarding which item in said reference item list is not in said current item list, and  
encoding information regarding content of at least one item in said reference item list, the  
determined type of classification is used to control the communication and compression of the  
packet header information, wherein the classification of the current item list associates the  
current item list with at least one of a plurality of different predetermined encoding schemes; and  
decompressing the received header information.

72. (Cancelled).